

WHAT IS CLAIMED IS:

1. A surface-pressure distribution sensor comprising a plurality of unit detection elements disposed in a sensor area, wherein the sensor is configured to operate under an 5 operation mode for measuring a surface-pressure distribution or a standby mode with reduced power consumption and is configured to alternate between the two modes.

2. A surface-pressure distribution sensor comprising:

a plurality of unit detection elements disposed in a sensor area; and  
10 a switch disposed in the sensor area,

wherein the sensor is configured to operate under an operation mode in which the unit detection elements are sequentially selected or a standby mode in which the unit detection elements are not selected and is configured to alternate between the two modes, and the switch is configured to change the standby mode to the operation mode when the switch is operated on.

15 3. The surface-pressure distribution sensor of claim 2, further comprising at least one additional mode changing switch.

4. The surface-pressure distribution sensor of claim 2, wherein the switch is disposed 20 between the unit detection elements.

5. The surface-pressure distribution sensor of claim 2, wherein one of the unit detection elements is configured to serve as the switch and to be operational during the standby mode.

25 6. A surface-pressure distribution sensor alternating between an operation mode and a standby mode, comprising:

an insulating substrate;

unit detection elements disposed on the insulating substrate in a matrix form;

a flexible conductive film facing the unit detection elements;

30 drain wires connected to corresponding terminals of the unit detection elements;

gate wires connected to corresponding terminals of the unit detection elements;

a horizontal scanning circuit selecting the drain wires sequentially;

a vertical scanning circuit sending a scanning signal to the gate wires sequentially;

a sensor control circuit connected to the horizontal scanning circuit and the vertical scanning circuit; and

5 a sensor actuation signal wire connected to the sensor control circuit,  
wherein the sensor control circuit is configured to receive a sensor actuation signal through the sensor actuation signal wire and configured to switch off the unit detection elements operational under the operation mode and to switch on the unit detection elements not operational under the standby mode in response to the sensor actuation signal.

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7. A surface-pressure distribution sensor alternating between an operation mode and a standby mode, comprising:

an insulating substrate;

unit detection elements disposed on the insulating substrate in a matrix form;

15 a flexible conductive film facing the unit detection elements;

drain wires connected to corresponding terminals of the unit detection elements;

gate wires connected to corresponding terminals of the unit detection elements;

a sensor area in which the unit detection elements and portions of the drain and gate wires are arranged;

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a horizontal scanning circuit selecting the drain wires sequentially;

a vertical scanning circuit sending a scanning signal to the gate wires sequentially;

a sensor control circuit connected to the horizontal scanning circuit and the vertical scanning circuit; and

a switch disposed in the sensor area and configured to provide a sensor actuation signal to the sensor control circuit so that the unit detection elements not operational under the stand by mode are switched on so as to operate under the operation mode.

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8. The surface-pressure distribution sensor of claim 7, further comprising at least one additional switch providing the actuation signal.

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9. The surface-pressure distribution sensor of claim 7, further comprising a sensor

actuation signal wire connected to the sensor control circuit, wherein the switch is disposed between the unit detection elements and is connected to the sensor actuation signal wire.

10. The surface-pressure distribution sensor of claim 7, wherein one of the unit detection  
5 elements is configured to serve as the switch under the standby mode.

11. A method for controlling a surface-pressure distribution sensor comprising a plurality of unit detection elements and a scanning circuit that selects the unit detection elements sequentially, the method comprising:

10 suspending a selection operation of the scanning circuit;  
selecting at least one of the unit detection elements while suspending the selection operation of the scanning circuit; and  
resuming the selection operation of the scanning circuit in response to an output of the unit detection element that is selected while suspending the selection operation.

15 12. A method for controlling an operation of a surface-pressure distribution sensor comprising unit detection elements, a vertical scanning circuit, a horizontal scanning circuit, gate wires connecting the vertical scanning circuit and the unit detection elements, drain wires connecting the horizontal scanning circuit and the unit detection circuit, a sensor control circuit connected to the vertical and horizontal scanning circuits, and a flexible conductive film facing the unit detection elements, the method comprising:

20 operating the vertical scanning circuit so that the gate wires are sequentially selected so as to supply a gate signal to the unit detection elements connected to the selected gate wire;  
operating the horizontal scanning circuit so that the drain wires are sequentially selected so  
25 as to determine whether a selected unit detection element is in contact with the flexible conductive film;

suspending the operating of the vertical and horizontal scanning circuits by breaking connections between the sensor control circuit and the vertical and horizontal scanning circuits;  
and

30 resuming in response to a sensor actuation signal the operating of the vertical and horizontal scanning circuits by restoring the connections between the sensor control circuit and

the vertical and horizontal scanning circuits.

13. The method for controlling an operation of a surface-pressure distribution sensor of  
claim 12, wherein the sensor actuation signal is generated in a sensor area that includes the unit  
5 detection elements and portions of gate and drain wires.

14. The method for controlling an operation of a surface-pressure distribution sensor of  
claim 13, further comprising generating the sensor actuation signal by a switch disposed between  
the unit detection elements, when the flexible conductive film contacts the switch.

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15. The method for controlling an operation of a surface-pressure distribution sensor of  
claim 13, further comprising supplying another gate signal to at least one of the unit detection  
elements while the operating of the vertical and horizontal scanning circuits is suspended, and  
generating the sensor actuation signal by the unit detection element receiving said another gate  
15 signal, when the flexible conductive film contacts the unit detection element receiving said  
another gate signal.

20 16. The method for controlling an operation of a surface-pressure distribution sensor of  
claim 12, further comprising suspending an operation of a peripheral circuit in response to the  
sensor actuation signal.

17. The method for controlling an operation of a surface-pressure distribution sensor of  
claim 13, further comprising suspending an operation of a peripheral circuit in response to the  
sensor actuation signal.

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